Bruce Jones
1825 E Appaloosa Rd
Gilbert AZ 85296
Intervener
Case No. 105
Dockett No. L00000B-00-0105

List of Witnesses:
Bruce Jones

Suzanne Pager
602 S San Marcos Circle
Gilbert, Az 85296

Suzanne Nee
1455 E Sagebrush St.
Gilbert, AZ 85296

List of Exhibits:

EMF Electric and Magnetic Fields
Associated with the Use of Electric Power
DOE/EE-0040 or 0076
Found at web site:
http://www.niehs.nih.gov/emfrapid/RepToCongress/ANN.REP95.html

Health Effects from Exposure to Power-line Frequency Electric and Magnetic Fields
Prepared in response to the 1992 Engery Policy Act
PL 102-486, Section 2118
Found at wed site:
http://www.niehs.nih.gov/emfrapid/html/EMF_DIR_RPT/NIEHS_Report.pdf

Report No. 1501BS
Noise Assessment Study for the Oasis Energy, LLC Santan Expansion Project
Gilbert, Az

Paper composed by Bruce Jones
Noise Concerns Additional Cost for Alternate Site

Community Noise
Birgitta Berglund & Thomas Lindvall
Stockholm, Sweden, 1995
Found at web site:
http://www.oms.ch/environmental_information/Information_resources/documents/Noise/noise1.pdf

Exhibits filed on behalf of Suzanne Pager

Data Requested from SRP Dated October 15,2000

Email from Randall Dietrich dated Aug, 29th 2000 @ 10:48:25

Slides to be shown at hearing containing data filed as exhibits noted

P. O. Box 52025
Phoenix, AZ 85072-2025
(602) 236-5900
www.srpnet.com

October 18, 2000

Mr. Bruce Jones
1825 E. Appaloosa Road
Gilbert, Arizona 85296

Dear Mr. Jones:

I am in receipt of your email dated October 15, 2000 in which you requested additional information pertaining to the Santan Expansion Project. Attached you will find SRP's responses to your questions.

If you should have any questions regarding this material, please feel free to contact me at (602) 236-5262.

Sincerely,

Kelly J. Barr
Manager, Regulatory Affairs and Contracts

Data Request of Mr. Bruce Jones
Dated October 15, 2000
Santan Expansion Project

1. **Data regarding EMI/EMF that SRP has taken or received on the transmission lines that run north from the SanTan Plant. Please include the lines that run north on Val Vista and the one that runs north approximately ½ mile east of Val Vista that leaves the eastern side of the SanTan plant. Does SRP check EMI/EMF emissions on a regular basis or do they predict emission levels? What is SRP's position on EMI/EMF and long term health effects on people? If SRP does not have EMI/EMF data on the power lines mentioned but has data on any others, please provide that data.**

   SRP Response:
   These transmission lines are not part of the Santan Expansion Project. In addition, SRP has no data regarding EMF for the transmission lines interconnecting to the Santan plant. Because there are no parameters or industry standards for establishing acceptable levels of EMF, any measurement of EMF is of little help. Included are two brochures that discuss EMF. As indicated in these documents, neither the epidemiology nor medical studies have identified a conclusive relationship between Electric and Magnetic Fields and health effects. SRP, along with other utilities, support the extensive research program of the Electric Power Research Institute (EPRI) on Electric and Magnetic Fields. It is a complex issue and one that continues to occupy the research efforts of experts around the country.

2. **When Hessler took readings on noise levels at the SanTan Plant what was the operating output? This was done in September 1999. Could you please provide the entire month (Sept 1999) operating levels. Examples could be in actual watts or the percent of full power. Also what fuel was being used for the month of Sept. 1999? The report is #1501BS, Noise Assessment Study for the Oasis Energy, LLC, Santan Expansion Project, Gilbert, Arizona.**

   SRP Response:
   Attached are the hourly operating levels in Mwh for the four generating units at Santan for September 16-19, 1999, the period in which noise level readings were taken by Mr. Hessler. Also included is a monthly generation report for Santan for September 1999. For the month, Santan generated 67,926 Mwh which equates to a 30.7% load factor. During that month the units were fueled solely by natural gas.

3. **In a letter dated Oct. 10, 2000 to Mr. and Mrs. James Parrault you mentioned Dynegy Engineering and Hessler Associates. In the first sentence of the second paragraph you reference Dynegy and NRG to jointly develop the Kyrene Expansion Project. Who is NRG?**

SRP Response:
NRG was the third party originally involved in the Kyrene Expansion Project. NRG is an independent power producer, specializing in the development, construction, operation, maintenance and ownership of low-cost, environmentally-sensitive power plants. Neither Dynegy nor NRG have any involvement in the Santan Expansion Project.

10/17/100 12:33 SANTAN MONTHLY GENERATION

MONTH/YR: 09/99

DAY	ST NET	ST1 GN	ST2 GN	ST3 GN	ST4 GN	ST AUX	DAY
01	-75	0	0	0	0	75	01
02	2263	787	768	0	804	96	02
03	2535	714	565	751	603	98	03
04	-86	0	0	0	0	86	04
05	2018	677	385	202	833	79	05
06	3393	872	830	881	916	106	06
07	2414	713	646	599	555	99	07
08	2144	447	581	543	671	98	08
09	-79	0	0	0	0	79	09
10	3291	852	754	948	843	106	10
11	3313	897	856	802	862	104	11
12	2465	594	630	690	650	99	12
13	3165	840	866	709	854	104	13
14	2839	768	642	846	686	103	14
15	-78	0	0	0	0	78	15
16	3353	853	853	870	882	105	16
17	3797	998	941	1054	912	108	17
18	2474	552	653	675	696	102	18
19	683	197	129	220	222	85	19
20	2401	435	554	886	618	92	20
21	2303	556	624	563	659	99	21
22	4564	1167	1219	1112	1166	100	22
23	3815	976	958	935	1048	102	23
24	3407	869	833	1004	797	96	24
25	-63	0	0	0	0	63	25
26	2198	594	704	228	762	90	26
27	1777	574	778	0	505	80	27
28	2196	704	791	784	0	83	28
29	1912	559	526	618	292	83	29
30	3586	944	933	908	895	94	30
TOTAL	67925	18139	18019	16828	17731	2792	
ADJ	1	3	2	1	2	7	
FINAL	67926	18142	18021	16829	17733	2799	

STMSM_1 Oct 17 2000 12:33PM

10/17/100 12:33 FORM PRINT COMPLETED

10/17/100 12:24 PLANT GENERATION SUMMARY

SANTAN Desired Date: 09/16/99

UNIT	DAY TOTAL	HR01	HR02	HR03	HR04	HR05	HR06	HR07	HR08	
ST1G	853	0	0	0	0	0	0	0	0	S
ST2G	853	0	0	0	0	0	0	0	0	S
ST3G	870	0	0	0	0	0	0	0	0	S
ST4G	882	0	0	0	0	0	0	0	0	S
ST AUX	105	3	3	3	3	3	3	3	3	ST
TOTAL	3353	-3	-3	-3	-3	-3	-3	-3	-3	TOT

PLTSUM_1 Oct 17 2000 12:23PM >

10/17/100 12:24 FORM PRINT COMPLETED

SANTAN Desired Date: 09/16/99 S

UNIT	HR09	HR10	HR11	HR12	HR13	HR14	HR15	HR16	HR17	UNIT
T1G	0	0	3	63	73	71	74	77	73	ST1G
T2G	0	0	24	71	70	70	70	71	70	ST2G
T3G	0	0	0	49	76	75	75	76	76	ST3G
T4G	0	0	3	63	75	75	75	74	75	ST4G
AUX	3	4	6	5	5	5	6	5	6	ST AUX
AL	-3	-4	24	241	289	286	288	293	288	TOTAL

>

ANTAN Desired Date: 09/16/99

HR18	HR19	HR20	HR21	HR22	HR23	HR24
73	73	74	74	76	45	4
70	71	72	72	73	44	5
76	76	77	77	78	44	15
75	75	77	76	76	45	18
5	5	6	5	5	6	4
289	290	294	294	298	172	38

Hessler Associates, Inc.
Consultants in Engineering Acoustics

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Date: December 10, 1999

Report No. 1501BS
Noise Assessment Study for the
Oasis Energy, LLC
Santan Expansion Project
Gilbert, Arizona

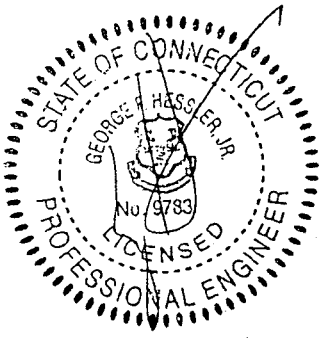
Prepared For:

Dynegy Engineering, Inc.
1000 Louisianna Street, Suite 5800
Houston, Texas 77002

Contract:
Service Agreement 9804-ES-003

Submitted by:

George F. Hessler, Jr., P.E., Bd. Cert. INCE



1.0 Introduction

Hessler Associates, Inc. has been contracted to conduct a noise assessment study for a proposed combustion turbine generating facility to be sited at the SRP (Salt River Project) Santan generating station in Gilbert, Arizona. The study consists of two basic tasks:

A. Conduct an ambient noise measurement survey to establish existing noise conditions.
B. Develop acceptable acoustic design goals for the proposed facility based on existing conditions and applicable regulations.

The acoustic design goals will determine the degree of noise mitigation required for the project. Assuming compliance with the developed goals, the planned facility will be completely compatible with the existing acoustic environment, and should cause no adverse community response.

2.0 Results and Recommendations

An ambient noise measurement survey was conducted over a 68 hour period from Thursday morning to Sunday morning, September 16 to 19, 1999 at the closest residential areas surrounding the proposed project site. The levels were found to be those typically found in urban residential communities throughout the country. The main source of noise is traffic from the surrounding road network, but noise emissions from the existing facilities were also detectable at the close measurement locations.

The predicted community response for noise from the existing facilities, which is readily audible at the closest residential receptor, was determined to be in a range of "No reaction, although noise is generally noticeable" using a "Normalized Ldn" community response prediction methodology. It was reported by SRP personnel that essentially no complaints have been registered during operation of existing facilities which lends creditability to the prediction methodology.

The same methodology was used to develop acceptable design goals summarized in Section 3.7 in the form of allowable "A" weighted sound levels at three receptor locations in the community. The analysis uses a daily 24 hour operational cycle for the planned facilities as opposed to day time only operation for the existing generating capacity.

Significant noise abatement measures will be required to meet the developed goals. As examples, based on experience at this point, it is likely that plant noise modeling will show the need for the following:

1. Low noise fans and splash mats for the 12 cell cooling tower
2. Special inlet silencing for the combustion turbine
3. A partial building or noise barrier walls around the turbine equipment
4. Special exhaust silencing in the HRSG outlet stack
5. Noise barrier walls or other measures around the inlet duct to the HRSG
6. Mufflers on steam vents

3.0 Discussion

3.1 Ambient Sound Survey Measurement Techniques

Five measurement locations were selected for study which are shown on Graphic 1 (Graphics follow the text portion of this report), . Locations 1, 2 and 3 were selected to measure levels at the closest residences to the planned site. A single measurement was made at locations 4 and 5. Location 4 is now an agricultural land use but possibly may become residential sometime in the future. Location 5 is at the closest community Park.

A continuous noise monitor was mounted at an elevation of 10 feet above grade at location 1 to document the daily temporal pattern of environmental noise levels. Ten to fifteen minute manual samples were recorded at all five locations for day and night time periods over the three day interval. The purpose of the manual measurements is to observe the sources of environmental noise, the prevailing weather conditions, and to corroborate the monitor results.

Weather conditions during the four day period were ideal for such a survey. Winds were calm or very light. Days were clear and sunny with day time temperatures of approximately 70 to 80 F. Relative humidity was low. Such conditions yield minimum residual ambient levels which is the test objective. The residual levels would always be present to provide acoustical masking of sound immissions from the planned facility.

Continuous measurements were made with a Type 2 precision Rion model NL-06 environmental noise monitor, while manual measurements were acquired with a Type 1 precision Rion model NA27 sound level meter and frequency analyzer. Rion wind screens were installed on each microphone, and the units were calibrated with a portable unit, B&K model 4330..

3.2 Measurement Results

Graphic 2 plots the continuous monitor results over the 68 hour period, and Graphic 3 tabulates the manual sampling results and periodic observations about plant source noise. The continuous monitor plot shows the daily operational cycle of the existing facilities at the site which typically shut down at about 10 PM and restart in the morning. The plots also show very high steam release noise associated with the shut down of existing facilities. Minimum levels occur during the early morning hours.

3.3 Data Analysis

The primary noise measurement metric to assess community noise is the "residual" level. This is the noise level that is exceeded 90% of the sampling period. Expressed another way, 90% of the time the instantaneous noise level is higher. Subjectively, the residual level is the quasi-steady level that occurs or remains in the absence of all identifiable intermittent or sporadic sources such as local vehicle passes, aircraft flyovers, train passes, barking dogs, etc. Graphic 4 illustrates a time trace over a 10 minute period and shows the residual level, L90, and also labels the equivalent (average) Leq level.

Typical residual noise levels found in communities throughout the country are shown below:

Typical Residential Area Sound Levels

Daytime Residual Level, dBA, Level Exceeded 90% of the Time, L90

Description	Typical Range	Average
Very Quiet Rural Area	31 to 35 inclusive	33
Quiet Suburban Residential	36 to 40 inclusive	38
Normal Suburban Residential	41 to 45 inclusive	43
Urban Residential	46 to 50 inclusive	48
Noisy Urban Residential	51 to 55 inclusive	53
Very Noisy Urban Residential	56 to 60 Inclusive	58

Source: U.S. EPA Community Noise Study

The average day time residual level at locations 2 and 3 was 47 dBA which is in the quieter range of Urban Residential. At location 1, the steady day time plant noise is around 51 dBA, the low end of the Noisy Urban Residential descriptor.

Leq is termed the "equivalent" level, or the "true energy average" level. Technically, it is defined as the constant energy level equivalent to the energy level of the actual time varying signal in the same time period. The average includes all sources of environmental noise including sporadic events excluded from the L90 measurement. Ldn, the 24 hour day-night level of most interest in environmental studies is calculated from the measured hourly Leq values. In this procedure, a 10 dB weighting or penalty is added to all actual measurements in the night time period from 10 p.m. to 7 a. m.

Ldn values (also abbreviated DNL) for the mid-night to mid-night 24 hour periods for Friday and Saturday of the survey has been calculated on Graphic 5. The result for Saturday is high due to thunder storm activity that passed through the area about 10 PM.

3.4 Applicable Regulations

There are no identified state or local noise regulations applicable at this site.

3.5 Acoustic Design Goals-Operational Noise

Combustion turbine plants may be designed, within economic constraints, to achieve excellent acoustical performance, i.e. low noise emissions by a combination of equipment arrangement and applied noise mitigation measures [2]. To accomplish this, site specific acoustic design goals must be developed in accordance with accepted methodology. The EPA "Levels" report, reference 1, promulgates a widely used methodology that normalizes the value of Ldn for correlation to community response with an intruding source of noise.

Reference [3] applies this methodology in Appendix A of the standard which can be used to predict community reaction to an intruding noise, or establish acceptable levels by starting with a desired response of "No reaction". The normalization method accounts for the existing ambient masking levels, the operational cycle of the noise, seasonal consideration, and the character of the sound. We have added an item termed site specific factors. The basis of the method is summarized by Graphic 6 which is reproduced from ANSI B133.8..

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2. Hessler, G. F. and D.M., "The control of and optimization of environmental noise emissions from combustion turbine plants", Power, Volume 30, Proceedings from the 1996 ASME Joint Power Conference, Houston , TX, Oct., 1996

3. ANSI B133.8, "Gas turbine installation sound emissions", 1971, 1986

The character of the intruding noise is important. A 5 dB penalty is added if the source contains distinguishable tones or beats, excessive low frequency spectral content, impulsiveness or any other adverse characteristic. Experience indicates that the noise emissions of combined cycle combustion turbine plants *do not* contain adverse character.

Site specific factors may be pre-exposure to the noise, limited outdoor use such as apartments, or a unique feature of the Phoenix area, architectural privacy walls. Masonry privacy walls provide acoustical benefit as calculated on Graphic 7 which shows that at least 3 dBA may be credited since levels in the rear yards would be reduced by this amount. The reduction would be greater for a sitting or lounging person versus a standing person. We have assumed these walls are six feet in height and the rear yards are 25 feet on average. The continuous walls, in combination with the residential structures, also provide acoustical screening by the first row of residences for the remaining development.

Graphic **8** shows the application of the prediction methodology. Since the Santan plant has existing generation equipment, and the noise level of this equipment was measured at residential receptors, it is possible to predict the community response for comparison to the past community response history of the plant. It was reported that there are no noise complaints during operations, and that the units are currently used on a daily basis but always shut down at night.

This scenario is input in Part A of Graphic 8, and the resulting normalized Ldn is 50 for entering the chart of Graphic 6. The predicted response is in the range from "No reaction, although noise is generally noticeable" . This prediction fits the past history. In essence, the validity of the community response prediction methodology is demonstrated by the existing facilities.

In Part B of Graphic 8, allowable noise levels from the planned facility, exclusive of the ambient, are developed for residential locations 1, 2 and 3 shown on Graphic 1. The analysis starts with a normalized Ldn of 55 which predicts a response of "No reaction, although noise is generally noticeable". The developed design goal for locations 1.2 and 3 is 48 dBA. A factor, relative to the audibility of the existing plant noise, has been subtracted from the actual allowable level to account for the cumulative effect or sum of the new and existing equipment.

The sum of all the capacity will result in very nominal increases over the existing levels.

Subjectively, the new plant operation in combination with the existing units would not be noticeable. During day time periods at location 1, the new plant emissions would increase the total by approximately 0.5 dBA (45 New + 51 dBA existing =51.5 dBA). This small increment would not be detectable to a careful observer trying to hear an increase. Similarly, the increase at locations 2 and 3 would be a maximum of 3.5 dBA (48 dBA New + 47 dBA ambient = 50.5 dBA). An increase of 3.5 dBA is not noticeable to an observer.

With the developed acoustic design goals achieved, it may be concluded that the planned facility will not have any adverse impact, and will be entirely compatible with the environment.

3.6 Design Goals - Transient Sources

Controlled steam venting from the HRSG occurs during normal start-up and shut-downs. Also during start-up, the combustion turbine bleeds or vents high pressure excess compressor inlet air. Under emergency conditions, safety valves may open resulting in extremely high but temporary noise levels.

Silencers are recommended for these sources at this site which is relatively close to dense residential development. Loud transient sources act as announcements that the plant is starting or stoping or experiencing up-set conditions. A transient source design goal essentially equal to the above steady operational design goal is recommended to limit impact from these sources. The back pressure on safety valves is dictated by boiler codes, but it is feasible to install silencers on safety valves to attenuate this source by a minimum of 20 dBA.

3.7 Summary of Acoustic Design Goals

Operational steady state limits at any load up through full load, see Graphic 1 for locations:

At location 1:	45 dBA
At location 2:	48 dBA
At location 3:	48 dBA

Transient Normal Start-up and Shut-down Limits at any location:

At any location 1 - 3 50 dBA

Emergency Steam Vents and Safety Valves:

Minimum of 20 dBA insertion loss

3.8 Noise Mitigation Measures

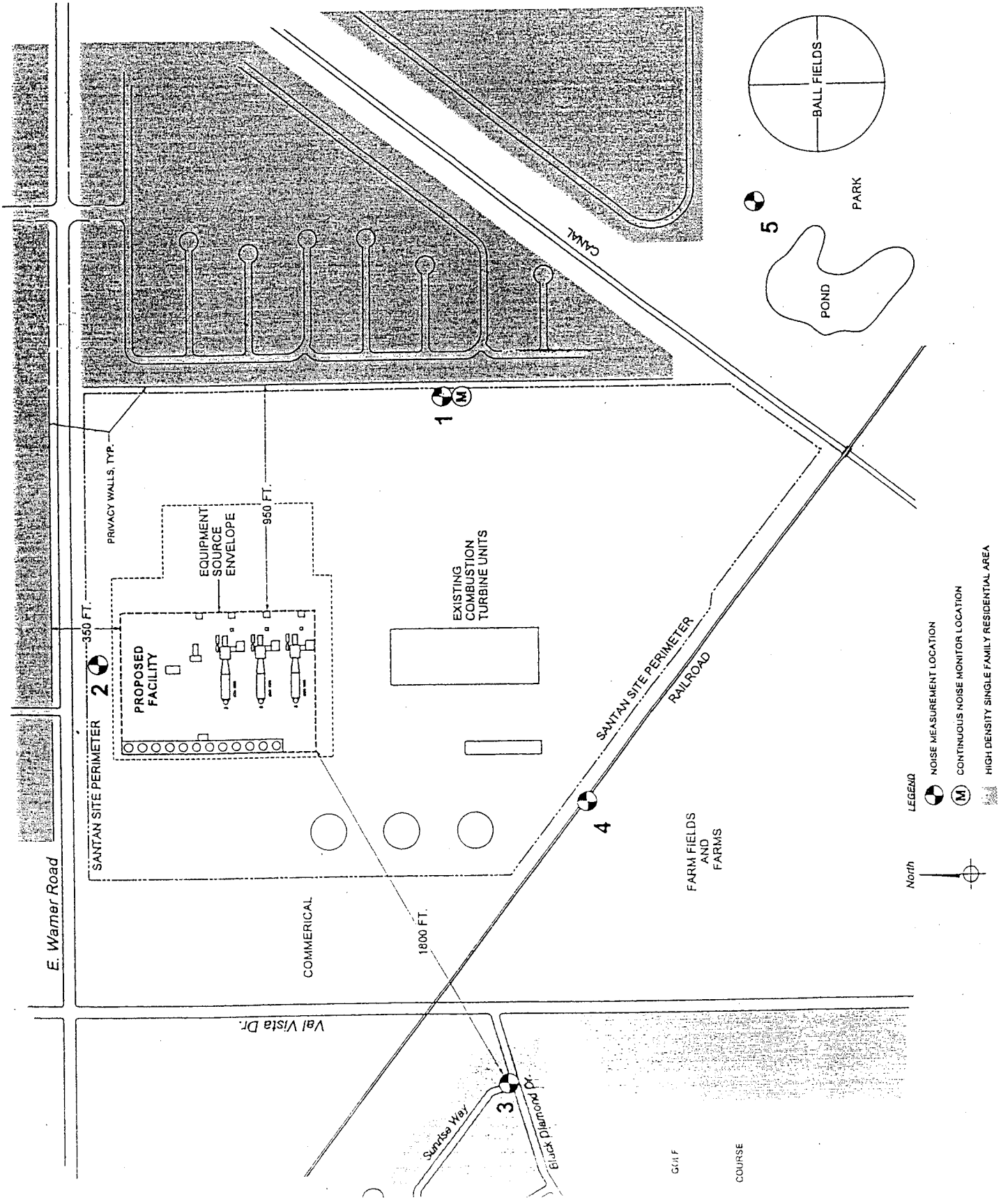
Significant noise mitigation measures will be required to meet the above acoustic design goals. For example, a 12 cell standard cooling tower will emit a maximum noise level of 60 dBA at location 2. A allowable facility noise limit of 48 dBA is recommended at this location. If the cooling tower accounts for half the plant noise emissions, a reduction from 60 to 45 dBA will be necessary for this component.

A cooling tower reduction of 15 dBA is about the best that can be done without path measures such as silencers on the inlet and, possibly, the exhaust of the fans. Relocation of the towers should also be considered.

Noise modeling is required to optimize and determine the extent of measures that will be necessary. It is likely that the following measures will be required:

1. Low noise fans and splash mats for the 12 cell cooling tower
2. Special inlet silencing for the combustion turbine
3. A partial building or noise barrier walls around the turbine equipment
4. Special exhaust silencing in the HRSG outlet stack
5. Noise barrier walls or other measures around the inlet duct to the HRSG
6. Mufflers on steam vents

End of Report


BALL FIELDS
PARK
CANAL
POND
5
1
M
PRIVACY WALLS, TYP.
950 FT.
EQUIPMENT SOURCE ENVELOPE
350 FT.
2
PROPOSED FACILITY
EXISTING COMBUSTION TURBINE UNITS
SANTAN SITE PERIMETER
SANTAN SITE PERIMETER
RAILROAD
4
FARM FIELDS AND FARMS
E. Warner Road
COMMERICAL
1800 FT.
Val Vista Dr.
3
Sunrise Way
Black Diamond Dr.
GOLF COURSE
North
LEGEND
NOISE MEASUREMENT LOCATION
CONTINUOUS NOISE MONITOR LOCATION
HIGH DENSITY SINGLE FAMILY RESIDENTIAL AREA

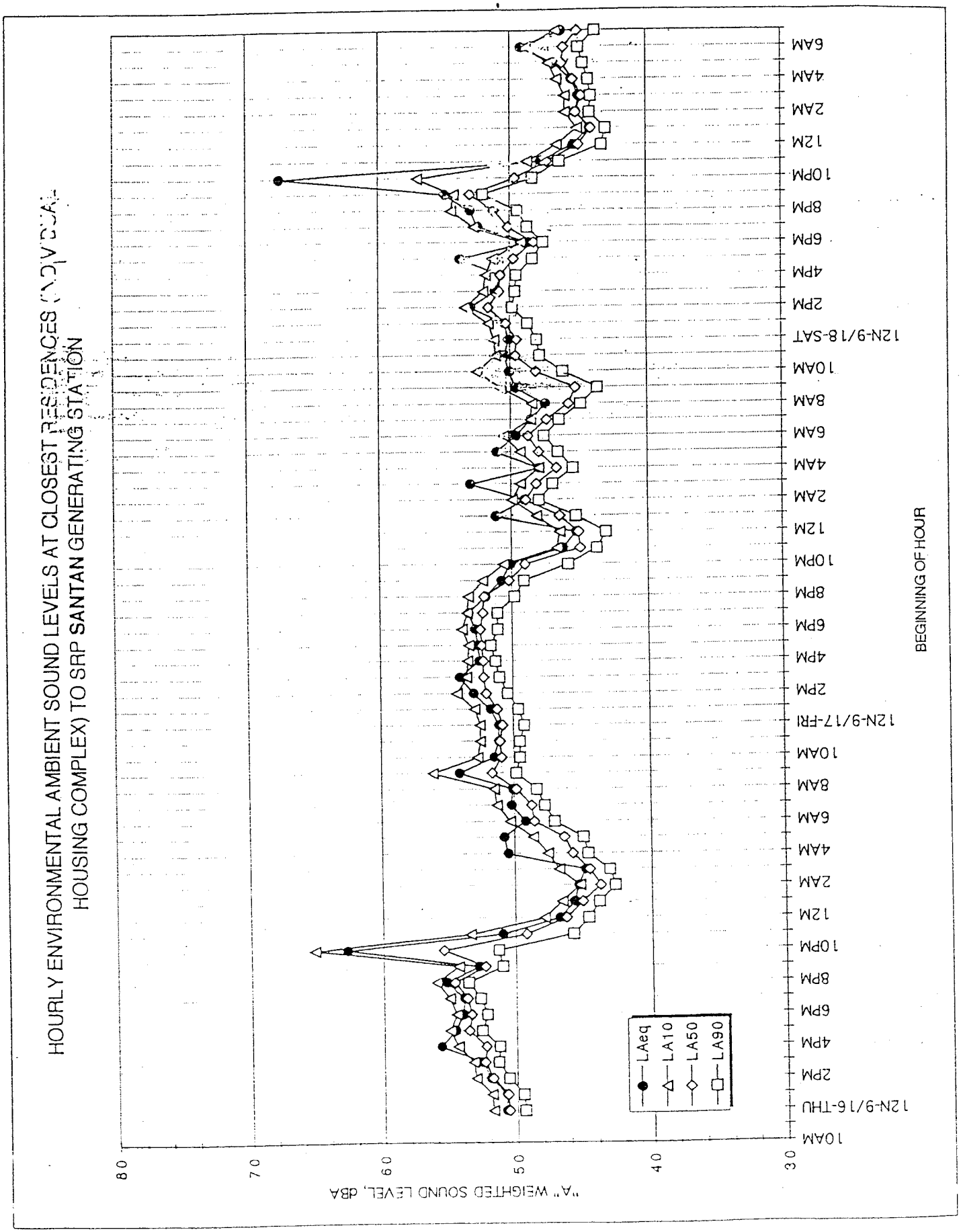

HOURLY ENVIRONMENTAL AMBIENT SOUND LEVELS AT CLOSEST RESIDENCES (NOVEDA
HOUSING COMPLEX) TO SRP SANTAN GENERATING STATION
"A" WEIGHTED SOUND LEVEL, dBA
80
70
60
50
40
30
LAeq
LA10
LA50
LA90
12N-9/16-THU
10AM
2PM
4PM
6PM
8PM
10PM
12M
2AM
4AM
6AM
8AM
10AM
12N-9/17-FRI
2PM
4PM
6PM
8PM
10PM
12M
2AM
4AM
6AM
8AM
10AM
12N-9/18-SAT
2PM
4PM
6PM
8PM
10PM
12M
2AM
4AM
6AM
BEGINNING OF HOUR

TABLE OF MANUAL SAMPLING RESULTS
SANTAN SITE

DATE	LOCATION	TIME	RECORD	"A" WTD SOUND LEVEL L1	L10	L50	**L90**	Leq	COMMENTS
THU-9/16/99	1	12:00 PM	111	53.8	51.8	50.2	**49.1**	50.5	PLANT OPERATING NOISE
	2	TO	114	58.4	54.1	49.5	**45.3**	51.2	PLANT FAINT, GAS METERING NOISE
	3	2:30PM	116	64.3	57.5	49.2	**46.6**	53.8	PLANT NOT AUDIBLE, TRAFFIC
	4	2:45 PM	115	58.4	55.4	54.1	**53.2**	54.4	PLANT AUDIBLE W/ EFFORT
	5	3:00 PM	117	51.2	45.6	43.7	**42.3**	44.6	PLANT NOT AUDIBLE, POND PUMP ONLY
FRI-9/17/99	1	9:25 AM	128	55.1	54.0	52.7	**51.6**	52.8	PLANT OPERATING NOISE "THROB"
	2	9:40 AM	129	68.7	62.3	55.9	**48.2**	58.7	PLANT NOISE BARELY AUDIBLE, GAS NOISE
	3	10:00 AM	130	66.7	56.0	48.9	**45.9**	53.9	PLANT NOISE FAINTLY AUDIBLE
	4								
	5								
	1	10:00 PM	134	56.3	53.4	52.1	**51.3**	52.4	PLANT NOISE
	2	10:10 PM	135	61.1	58.4	51.3	**46.0**	54.0	LOW PLANT NOISE
	3	10:30 PM	136	66.4	57.1	51.3	**50.0**	55.4	PLANT COOLING TOWER DETECTABLE
	4								
	5								
SAT-9/18/99	1	10:45 AM	143	50.0	48.2	47.0	**45.3**	47.0	PLANT NOISE
	2	11:05 AM	144	62.8	60.2	55.0	**45.9**	56.3	PLANT BARELY AUDIBLE
	3	11:27 AM	145	67.3	60.5	50.0	**47.0**	56.6	PLANT COOLING TOWER
	4								
	5								
	1	11:10 PM	149	53.1	49.6	48.8	**48.2**	49.0	PLANT DIFFERENT-NO HUM, SHUTING DN?
	2	11:25 PM	150	62.8	56.5	48.1	**45.5**	52.9	PLANT COOLING TOWER ONLY?
	3	121:42 PM	151	66.1	53.8	45.6	**43.2**	52.9	NO PLANT NOISE
	4								
	5								

AVERAGE DAY TIME RESIDUAL L90 LEVEL AT 2 = **47**
AVERAGE DAY TIME RESIDUAL L90 LEVEL AT 3 = **47**

NOTES:
LOCATION 1 IS AT START OF HOUSES DUE EAST OF EXISTING EQUIPMENT
LOCATION 2 IS AT NORTH PL
LOCATION 3 IS AT IS AT BLACK DIAMOND AND SUNRISE
LOCATION 4 IS AT AT RR TRACK AT START OF FARM LAND
LOCATION 5 IS AT CROSSWOODS PARK

DATA ACQUIRED WITH TYPE 1 PRECISION RION MODEL NA27 SLM AND 1/3 OCTAVE ANALYSER
SAMPLES ARE 10 MINUTE MINIMUM IN DURATION, SEE DATA LOGS FOR ALL IDENTIFIED SOURCES
WEATHER TYPICAL AZ SUNNY SKY, NO SIGNIFICANT WIND DURING ANY SAMPLE

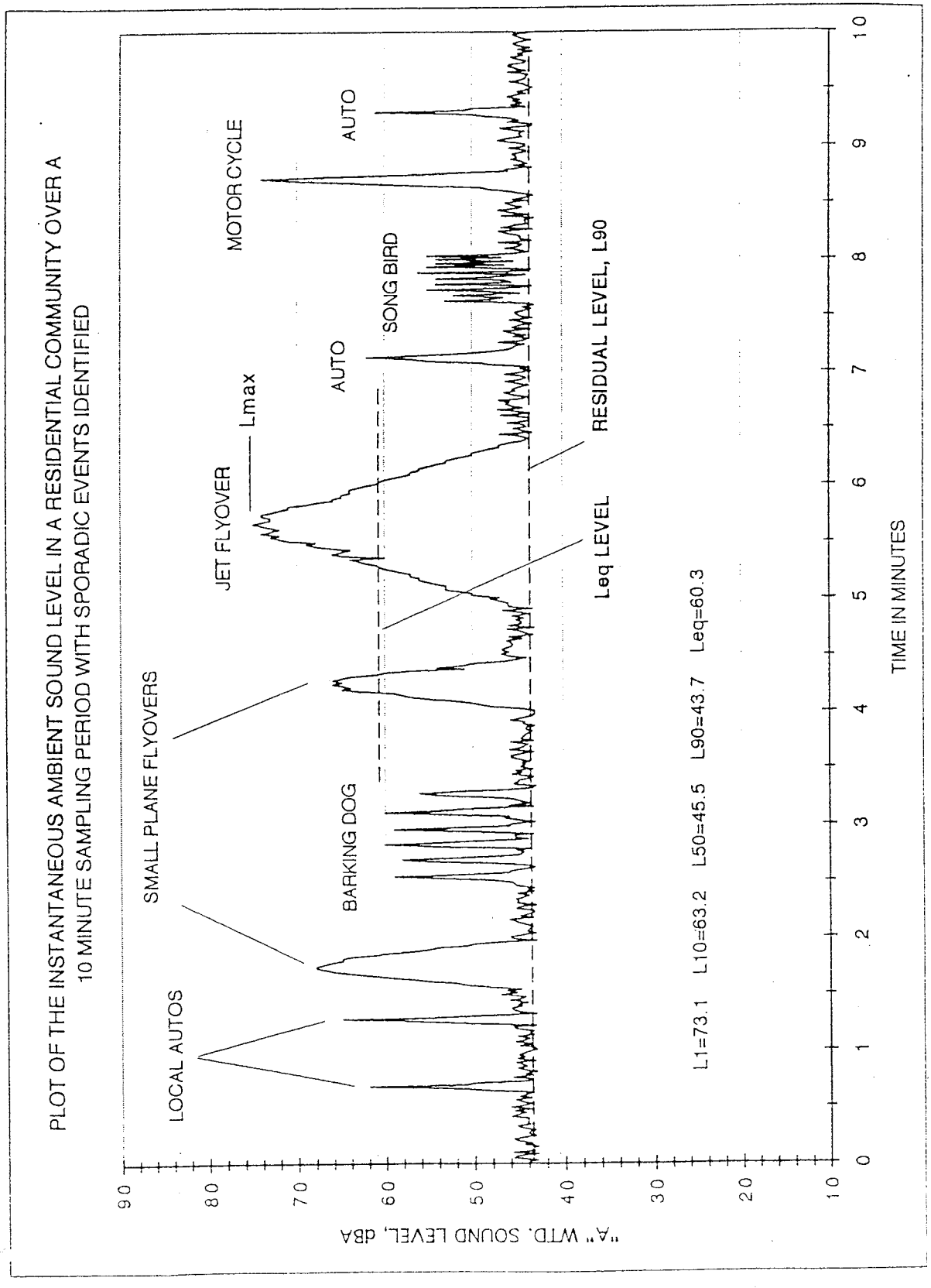

PLOT OF THE INSTANTANEOUS AMBIENT SOUND LEVEL IN A RESIDENTIAL COMMUNITY OVER A
10 MINUTE SAMPLING PERIOD WITH SPORADIC EVENTS IDENTIFIED
LOCAL AUTOS
SMALL PLANE FLYOVERS
BARKING DOG
JET FLYOVER
Lmax
AUTO
SONG BIRD
MOTOR CYCLE
AUTO
Leq LEVEL
RESIDUAL LEVEL, L90
L1=73.1 L10=63.2 L50=45.5 L90=43.7 Leq=60.3
"A" WTD. SOUND LEVEL, dBA
TIME IN MINUTES
90
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10

TABLE 111:-SANTAN SITE
CALCULATION OF DAY/NIGHT SOUND LEVEL (DNL)

FRIDAY, SEPTEMBER 17, 1999

TIME	Leq
12M	46.7
1	45.6
2	45.3
3	44.8
4	50.5
5	50.8
6	49.2
7	50.2
8	50.1
9	54.1
10	51.5
11	51.1
12N	51.1
1	51.7
2	53.0
3	54.0
4	52.5
5	52.6
6	52.8
7	53.3
8	52.0
9	50.8
10	50.1
11	46.2

FOR DNL CALCULATION

Ln	Ld	Leq(24)	DNL
48.3	52.2	50.7	**55.5**

FOR CNEL CALCULATION

Ln	Ld	Le	CNEL
48.3	52.2	52.2	56.0

DELTA Ldn to Leq.
4.8

DELTA CNEL to Leq.
5.3

SATURDAY, SEPTEMBER 18, 1999

TIME	Leq
12M	45.2
1	51.2
2	49.0
3	53.1
4	47.9
5	51.1
6	49.6
7	48.5
8	47.4
9	49.6
10	50.1
11	50.4
12N	50.1
1	50.4
2	53.0
3	51.1
4	50.7
5	53.8
6	48.6
7	52.4
8	53.0
9	54.9
10	67.5
11	47.7

FOR DNL CALCULATION

Ln	Ld	Leq(24)	DNL
58.5	51.4	56.3	**64.4**

SEE NOTE AT 10 PM DATA

FOR CNEL CALCULATION

Ln	Ld	Le	CNEL
58.5	50.7	53.6	64.5

DELTA Ldn to Leq.
8.1

DELTA CNEL to Leq.
8.2

SINGLE EVENT
CONTROLS DNL VALUE
DNL W/O THIS EVENT=56.6

TIME OF DAY	THU 9/16/99	FRI 9/17/99	SAT 9/18/99
7		47.7	46.4
8		48.3	44.8
9		49.8	43.6
10		49.5	46.1
11		49.5	47.8
12N	49.4	49.2	48.0
1	49.5	49.6	48.7
2	50.6	50.4	49.8
3	51.4	51.0	49.6
4	51.3	51.3	49.5
5	52.6	51.6	48.3
6	52.2	51.1	47.5
7	52.7	51.1	48.7
8	53.6	49.8	49.4
9	51.0	49.1	52.0
AVERAGE DAY TIME L90 LEVEL:	51.4	49.9	48.0

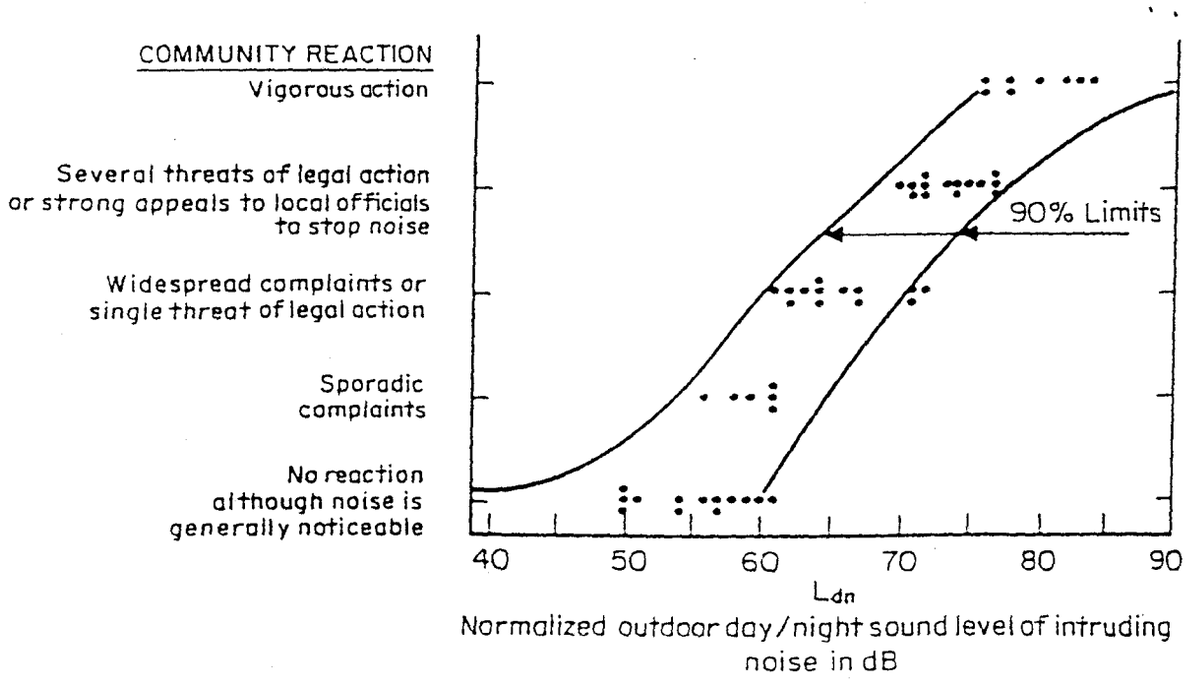


Figure A1

Community Reaction to Noises of
Many Types as a Function of the Normalized
Outdoor Day/Night Sound Level of the Intruding Noise

1/11/00 KEP COORDINATION MTG

1/24 in San Diego. @ NRG ofc.
1/25 CEC
2/8 in Houston

- Wendy's PM10 design criteria comments
  16 guarantee, 14 permit, 6 ~ 12 actual. Board + lender risk issue
  Agreed to accept 14. OK'd
- D+M $24K. $50,000 original, so 50% increase. OK'd
- Newsletter #3.

* Tell Randy my thoughts on SRP's involvement during construction
Per Keith's input to Jeanne.

- Wendy to do NEPA lead.

- 1/26 consultants will be there for CWG.

* Sultana - Status of Phase II.
* Predominate wind direction? Confirm East @ 6 mph.

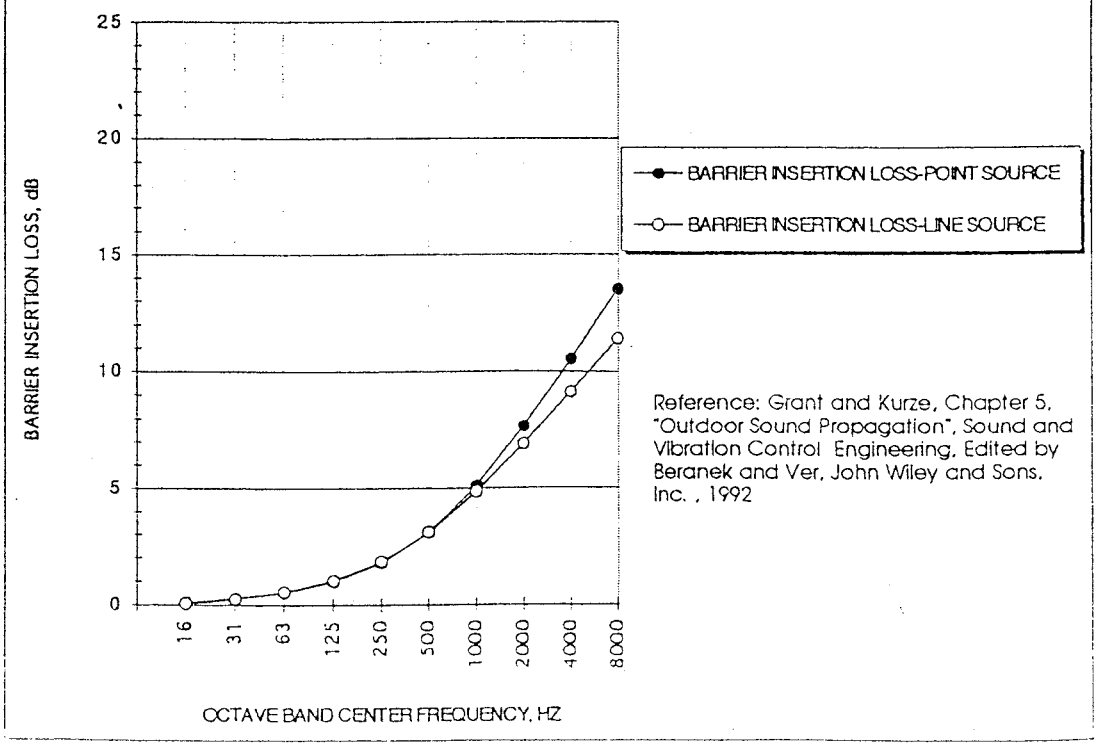
C Rus
Jim Hunt
619 615 6722
jrh@sdwple.com
harryp@primenet.com

CALCULATION OF BARRIER NOISE REDUCTION FOR 6' HIGH MASONRY PRIVACY WALLS

OCTAVE BAND CENTER FREQUENCY, HZ

		16	31	63	125	250	500	1000	2000	4000	8000	dB(A)	dB(C)	dB(AP)
BARRIER INPUTS: USCU														
DISTANCE FROM SOURCE TO BARRIER, Is	2100											A=	2100.0	
DISTANCE FROM BARRIER TO RECEIVER, Ir	12.5											B=	0.66	
THICKNESS OF BARRIER, B	0.66											C=	12.6	
HEIGHT OF SOURCE, Hs	20.0											d=	2113.2	
HEIGHT OF BARRIER, Hb	6.0													
HEIGHT OF RECEIVER, Hr	4.5											C1=	0.75	LINE
												C2=	2.15	LINE
N=		0.00	0.00	0.01	0.02	0.04	0.07	0.14	0.28	0.56	1.13	C1=	1.00	POINT
SQRT FRESNEL NUMBER, SQRT N=		0.05	0.07	0.09	0.13	0.19	0.27	0.38	0.53	0.75	1.06	C2=	1.77	POINT
*BARRIER CALCULATION UNDER NUETRAL WIND CONDITIONS-- **LINE** SOURCE*														
A=SQRT2*PI*N		0.12	0.17	0.24	0.33	0.47	0.67	0.94	1.33	1.88	2.66	H(eff)=	1.4	FEET
B=TANH(C2SQRT2*3.1416*N)		0.25	0.34	0.47	0.61	0.77	0.89	0.97	0.99	1.00	1.00			
20C1LOG(A/B)+5		0	0	1	1	2	3	5	7	9	11			
P1 -CALCULATED BARRIER ATTENUATION		0	0	1	1	2	3	5	7	9	11			
P2 -NR=TL(MASS LAW-REF)	20.0	17	22	29	34	40	47	53	59	65	71	STC= 50		
BARRIER INSERTION LOSS-LINE SOURCE		*0.1*	*0.3*	*0.5*	*1.0*	*1.8*	*3.1*	*4.8*	*6.9*	*9.1*	*11.4*			
*BARRIER CALCULATION UNDER NUETRAL WIND CONDITIONS-- **POINT** SOURCE*														
A=SQRT2*PI*N		0.12	0.17	0.24	0.33	0.47	0.67	0.94	1.33	1.88	2.66			
B=TANH(C2SQRT2*3.1416*N)		0.21	0.29	0.40	0.53	0.68	0.83	0.93	0.98	1.00	1.00			
20C1LOG(A/B)+5		0	0	1	1	2	3	5	8	11	14			
P1 -CALCULATED BARRIER ATTENUATION		0	0	1	1	2	3	5	8	11	14			
P2 -NR=TL(MASS LAW-REF)	20.0	17	22	29	34	40	47	53	59	65	71	STC= 50		
BARRIER INSERTION LOSS-POINT SOURCE		*0.1*	*0.3*	*0.5*	*1.0*	*1.8*	*3.1*	*5.1*	*7.6*	*10.5*	*13.5*			

CALCULATED BARRIER INSERTION LOSS (OVER AND THROUGH) FOR A LINE AND POINT SOURCE



Reference: Grant and Kurze, Chapter 5, "Outdoor Sound Propagation", Sound and Vibration Control Engineering, Edited by Beranek and Ver, John Wiley and Sons, Inc., 1992

NOTE:
FOR THE SPECTRUM OF A TYPICAL COMBUSTION TURBINE ENERGY FACILITY, THE BARRIER REDUCTION AT 500 HZ IS APPROXIMATELY EQUAL TO THE "A" WTD. LEVEL REDUCTION.

SANTAN SITE

REFERENCE: COMPLETED TABLE A1 FROM AMERICAN STANDARD ANSI B133.8

PART A: ESTIMATE COMMUNITY REACTION AT LOCATION 1

ESTIMATE NORMALIZED Ldn AT SINGLE FAMILY RESIDENTIAL EAST OF PLANT

SUMMER/WINTER PEAKING SERVICE (UP TO 15 HOURS/DAY, NO OPERATION AFTER 10:00 PM)

1	NORMALIZED Ldn =	50	**EST. RESPONSE IS "NO REACTION"**
2	CORRECTIONS:		
	A. SEASONAL	0	SUMMER AND YEAR ROUND
	B. BACKGROUND	-3	ESTIMATED DAYTIME L90 = 45 dBA (45 - 48 = -3) PLANT DOWN ON SUN 7AM
	C. OPERATIONAL CYCLE	2	DAILY UP TO 15 HOURS/DAY, SHUT DOWN AT 10:00 PM
	D. MISCELLANEOUS	3	PRIVACY WALLS
	SUM OF CORRECTIONS	2	
3	LEVEL AT RECEPTOR	52	dBA (MEASURED Ld = 52 ON FRIDAY 9/17/99, PLANT OPERATING)

PART B: DEVELOP ACOUSTICAL CRITERIA FOR PLANNED INSTALLATION

DEVELOP ACCEPTABLE NOISE CRITERIA AT RECEPTOR 1

24 HOUR CONTINUOUS OPERATION

1	NORMALIZED Ldn	55	RESPONSE: "NO REACTION ALTHOUGH NOISE IS GENERALLY NOTICEABLE"
2	CORRECTIONS:		
	A. SEASONAL	0	SUMMER AND YEAR ROUND
	B. BACKGROUND	-3	ESTIMATED DAYTIME L90 = 45 dBA (45 - 48 = -3) PLANT DOWN ON SUN 7AM
	C. OPERATIONAL CYCLE	-7	24 HOUR OPERATION
	D. MISCELLANEOUS	3	PRIVACY WALLS
	SUM OF CORRECTIONS	-7	
3	ACCEPTABLE LEVEL =	48	dBA AT RECEPTOR 1 AT SINGLE FAMILY RESIDENTIAL EAST AT 950'

NOTE: REDUCE BY 3 dBA TO 45 dBA TO ACCOUNT FOR EXISTING CAPACITY

DEVELOP ACCEPTABLE NOISE CRITERIA AT RECEPTOR 2

24 HOUR CONTINUOUS OPERATION

1	NORMALIZED Ldn	55	RESPONSE: "NO REACTION ALTHOUGH NOISE IS GENERALLY NOTICEABLE"
2	CORRECTIONS:		
	A. SEASONAL	0	SUMMER AND YEAR ROUND
	B. BACKGROUND	-1	MEASURED DAYTIME L90=47 dBA (47 - 48 = -1)
	C. OPERATIONAL CYCLE	-7	24 HOUR OPERATION
	D. MISCELLANEOUS	3	PRIVACY WALLS
	SUM OF CORRECTIONS	-5	
3	ACCEPTABLE LEVEL =	50	dBA AT RECEPTOR 2, SINGLE FAMILY RESIDENTIAL NORTH AT 300'

NOTE: REDUCE BY 2 dBA TO 48 dBA TO ACCOUNT FOR EXISTING CAPACITY

DEVELOP ACCEPTABLE NOISE CRITERIA AT RECEPTOR 3

24 HOUR CONTINUOUS OPERATION

1	NORMALIZED Ldn	55	RESPONSE: "NO REACTION ALTHOUGH NOISE IS GENERALLY NOTICEABLE"
2	CORRECTIONS:		
	A. SEASONAL	0	SUMMER AND YEAR ROUND
	B. BACKGROUND	-1	MEASURED DAYTIME L90=47 dBA (47 - 48 = -1)
	C. OPERATIONAL CYCLE	-7	24 HOUR OPERATION
	D. MISCELLANEOUS	3	PRIVACY WALLS
	SUM OF CORRECTIONS	-5	
3	ACCEPTABLE LEVEL =	50	dBA AT RECEPTOR 3, SINGLE FAMILY RESIDENTIAL AT 1800'

NOTE: REDUCE BY 2 dBA TO 48 dBA TO ACCOUNT FOR EXISTING CAPACITY

Subject:
Date: Tue, 29 Aug 2000 10:48:25 -0700
From: "DIETRICH RANDALL GERARD (RANDY)" <rgdietri@srpnet.com>
To: "'bjones@primenet.com'" <bjones@primenet.com>
CC: "ROHOVIT JANEEN C <jcrohovi@srpnet.com>" <kjbarr@srpnet.com>, "LONON TERRY A (TERRY)" <talonon@srpnet.com>

bruce, the following is in response to your email of august 21.

1) as we have indicated srp did analyze approximately ten sites before choosing kyrene and santan for project development. adding new power generation at those two sites was by far the most economic choice for srp customers. we are in a very competitive environment as it relates to power plant development. hence, the information on our evaluation of the alternative sites is proprietary and confidential. if you would be willing to sign a confidentiality agreement we can discuss those alternatives with you.
you asked about any information relative to power plants east of central avenue. i'm only aware of 3 existing thermal plants east of central. of course there are a number of businesses that have their own generating facilities on site (empire machinery in mesa is one of these, the phoenician is another). but the utility owned sites are srp's kyrene and santan facilities and aps' ocotillo plant at mcclintock and the salt river in tempe. aside from srp's proposed plants at kyrene and santan i am not aware of any other proposed facilities east of central and within maricopa county.

2) srp will be responsible for meeting the noise levels. our noise consultant set the objectives which we shared with the public at the finley farms school open house.

3) the noise study that was done for srp does not contain any hz/db analysis or graphs. we do not have any information related to this measure. keep in mind that srp has not yet obtained the combustion turbines or any of the other equipment that would be used for the proposed santan expansion. at the time that we would do so we would specify noise levels for the equipment procurement process. and we would design in whatever other noise suppression steps that might be necessary to meet our target levels.

4) since we have not specified the exact equipment for the santan expansion project i do not have any information to share with you on the question related to natural frequencies.

5) we currently have three tanks for storage of diesel oil at the site. when this plant was built in the mid 70's there was no natural gas line and hence the generating units operated on diesel oil whenever they ran. el paso natural gas co built a gas line to the plant in the early 80's. since that time we have only burned diesel during times when our gas supply was curtailed by el paso. those occurrences have been rare during the past 18 years. consequently we have burned little oil during that time period. right now the two northern most tanks are empty. we must continue to have a backup supply of diesel oil for the existing units in order to maintain reliable electric service in the valley. if we had no backup oil supply then we'd have to shut those generating units down when our gas supply was curtailed. we have similar backup oil supplies at our other valley plants (kyrene and agua fria). the proposed new generating units at santan will NOT have backup oil burning capability.

6) a consultant has been retained to conduct an analysis of property values in the santan area. we hope that their work will be available before the september 14 siting committee hearing but we cannot guarantee when it will be finished.

7) srp has approximately 730,000 customers. our service territory is fairly small and is comprised of western, southern and eastern portions of the phoenix metropolitan area. we also serve small portions of pinal county (apache junction).

8) srp cannot guarantee marketability of any homes. as you know home values are affected by a number of things, most of which are totally out of srp's control. i can tell you that our kyrene facility has a 120 foot stack on unit 2 (installed in 1954) and a number of transmission towers along the eastern and southern boundaries of the property that are above 150 feet, and a 500 kv switchyard in the sw corner of the property that are very visible from the surrounding communities. and none of these facilities deterred the development of the alisanos and neighborning subdivisions, where homes sell for $300-500k. if power generating and transmission facilities resulted in degradation of property values then why have those high end developments been successful right across the street from kyrene?

we have placed a copy of our application to the state siting committee in an information room at srp's project administration building. it is located at 1521 north project drive, just across van buren from the zoo. you are welcome to come in and review that application. it is in the corporate secretary's office. ms. terry lonon is the person to contact if you do opt to come review this material. the application contains information related to water supply, wastewater, air modeling, site enhancements, and a general description of the project.

105

Citizens Opposing San Tan

Noise Concerns

Additional Cost for Alternate Site

Presented by Bruce Jones COST Member

Noise Concerns:

1. What noise will come from the San Tan Site?
   SRP's response (Mr. Randall Dietrich) is that they won't know until the plant is built. The only reference to the noise issue is that SRP wiil controll the db levels. SRP stated that at the open house, held at Finely Farms School, in reference to db levels, SRP would abide by those levels. The problem with that is they will only control the db level and not the sound. Decibels or db is only the pressure or loudness of sound, not the tone or frequency. We are concerned that SRP has not identified what sounds will be produced by this plant, until it starts up. Low tones travel farther distances than high tones at the same db level. High tones are directional and can be easily controlled and low tones are Omni-directional and are difficult to control. An example of this is when you are asleep in bed and a rumbling feeling awakens you. Only then you realize that it is the garbage truck a few streets away. The frequency or tone and not just the level (db) generate that rumbling. The truck a few streets away is fairly quite as noise levels go, but the sound frequency traveled a great distance, still with enough energy to shake or rumble you awake. SRP needs to identify what sounds it will generate from this expansion project at San Tan.

   For this reason, We COST ask that until this noise issue is properly addressed and guarantee is granted by SRP that noise generated by the San Tan plant will not effect a single resident that no order be given to continue.

Additional Cost for Alternate Site:

We have been quoted on several occasions that the cost to move the San Tan to an alternate site would be in the range of $100 to $200 million dollars. I'm sure we all agree that this is quite a large some of money and quite a burden on SRP to move the site. We at COST are aware that more power in the future will be needed. Somehow we must build plants that won't impact or change the flavor of our town. We were told that the San Tan was a Peak Power Demand Site and not a full time generating plant when we purchased our property. That was something we agreed with. A part time plant built 20+ years ago when it was out of the general population that development finally caught up with. Because of poor

planning by the Town of Gilbert, housing was allowed to encroach up to the plant. Still the residents accepted the plant because of its low capacity. I believe the most it ran was fewer than 15% of its capacity. Now we have a major expansion of the valley. More housing, more industry moving into the valley every day and SRP is concerned that it won't be able to keep up. The only alternative is to build more plants or expand the existing ones. The easy way is to expand the existing plants. It's for the good of the communities it serves. That isn't quite true. By expanding San Tan, SRP will forever change the small town flavor that was truly Gilbert. A very large building area followed by huge stacks 150 feet high.
It will never fit in. But we can't move to another site because it will cost too much. Hundreds of millions of dollars. We at COST agree that it might cost that much. Let's not dwell on the cost but figure away to do it.

We researched the problem and found a simple solution.

$150,000,000 to move to an alternate site. Use a bond to raise that money.

$ 360,000,000 Total cost of a 20 year bond @ 7% interest. A payment of $10,500,000 in interest due each year until bond paid.

$ 18,000,000 The cost to service the bond per year. $10,500,000 in interest and $7,500,000 to bank to repay the bond in 20 years. 7.5M * 20 Years= $150,000,000 to repay the note. We didn't calculate additional interest that SRP could make if they invested the $7,500,000 per year for they repayment of the bond.

Solution: Distribute the yearly repayment to all customers of SRP. SRP has 730,000 customers that consumed 32,262,000,000 kWh of energy in the fiscal year 2000. Take the yearly payment, divided by the kWh sold.

$18,000,000/32,262,000,000= $0.00056 per kWh. This will impact everyone equally. A customer that uses 1000 kWh per month or 12,000 kWh per year will see an increase monthly of $0.56 or $ 6.72 per year. $0.00056 per kWh increase to save a community and still meet the demands of more power in the future. We should remember that as the valley expands and more customers come online with SRP the amount

calculated for repayment would change. But if a fixed amount is kept and growth continues repayment of this bond will occur sooner.

This solution is a WIN, WIN for all. SRP can expand and plan for future growth and the flavor, lifestyle that brought us to Gilbert will remain intact.

For this reason, We COST, ask that SRP not be given an order to continue the San Tan Expansion but directed to discover an alternative site.

CASE 105
L06000 B-00-0105
Witness
for Bruce James

The testimony of witness Suzanne Pager will refer to applications for offsets filed by SRP with Maricopa County and also emissions inventories for the San Tan plant filed with Maricopa County. Also Comments on Santan's Draft Title V General Permit Conditions submitted to Maricopa County are being submitted.
Copies of a letter signed by physicians at Gilbert Children's Medical Group will be included. A letter from Carlin Bartschi M.D. may be included if it is received in time for the hearing.
Reference will be made to web pages Http://www.maricopa.gov/sbeap/inversion.htm.
And www.epa.gov/region09/air/permit/cap.htm
Also inversions, ammonia slip, hazardous air pollutants, effects of specific pollutants on health, and pollution at alternative sites will be discussed.
The witness will refer to information from a phone conversation with Scott Bohning, an environmental engineer for EPA.

Documents included: a letter from pediatricians at Gilbert Children's Medical Group; summary of emissions inventories put into tons compared to new plant emissions; applications from SRP submitted to Maricopa County regarding offsets to be used at San Tan and/or Kyrene; Emissions Inventories for the San Tan Plant; and
Comments on Santan's Draft Title V General Permit Conditions submitted to Maricopa County.

Gilbert Children's Medical Group

Randy H. Leavitt, MD FAAP
Dale W. Guthrie, MD FAAP
Gary G. Auxier, MD FAAP
Melani Jaskowiak, RN CPNP

16 October 2000

To Whom It May Concern:

We are writing with reference to the addition of a new power plant in Gilbert by SRP. We are very concerned about the increase in Carbon monoxide and Hazardous Air Pollutants which would be involved and especially the additional particulate matter which this plant would generate.

Our patients with asthma would definitely be better served by not being exposed to these increases in pollution.

Thank you for your consideration.

Sincerely,

Dale W. Guthrie MD FAAP

Randy H. Leavitt MD FAAP

Gary G. Auxier MD FAAP

201 West Guadalupe Road Suite 315 Gilbert, Arizona 85233 (602) 892-3880 Fax (602) 545-4551

SAN TAN EMMISSIONS (IN TONS)

(figures from 1993-1999 emissions inventory reports and page 1 of Dames & Moore Air Quality Impact Analysis)
(inventory emissions converted from pounds to tons for purpose of comparision)

	1993	1994	1995	1996	1997	1998	1999	NEW PLANT ALONE (NOT USING OLD)
CO	130	166.6	72.7	96	155	307.5	336.7	417.7
VOC	9.8	11.7	5	6.8	10.5	20	3.63	104.1
NOx	521	667	291	400.8	622	1236	1356	269.3
PM10	47.6	63.5	27.75	37.9	59	117.7	129	244
TOTAL	708.4	908.8	396.45	541.5	846.5	1681.2	1825.33	1035.1

Dry Low NOx Burners to be installed would reduce NOx by 60% at peaking or 80% at baseload capacities according to SRP's application to install Dry Low NOx burners at San Tan. Pollutants other than NOx would not be reduced. If the plant were operated at the same capacity as it were in 1999 after the Dry Low NOx Burners were installed, reducing NOx by 60%, emissions would be as follows:

CO -336.7
VOC -3.6
NOx -542.4
PM10-129
Total- 1011.7

If the plant with cleaners were used at 1999 capacity along with the new plant emissions would be

CO -754.4
VOC –107.7
NOx -881.7
PM10-373
Total –2046.8

The plant was used at 10.6% capacity in 1997, 22.4% capacity in 1998, 24.7% in 1999, projected 40% usage in 2000.

P. O. Box 52025
Phoenix, AZ 85072-2025
(602) 236-5900
www.srpnet.com

Mail Station: PAB352
Phone: (602) 236-2968
Fax; (602) 236-3407
Email: kgwantta@srpnet.com

August 3, 2000

Mr. Dale Lieb
Maricopa County Environmental Services Department
Air Quality Permits
1001 N. Central Avenue, Suite 200
Phoenix, AZ 85004

Re: Minor Permit Revision
Installation of Dry Low NOx Burners
Santan Generating Station
Permit Number V95-008

Dear Mr. Lieb:

Enclosed please find an application for a minor Title V permit revision to install dry low NOx burners in the four combustion turbines at the Santan Generating Station. A check in the amount of $300 has also been enclosed for the non-refundable application fee.

On July 10, 2000 SRP submitted a significant permit revision for installation of dry low NOx burners at the Santan Generating Station. The primary purpose of the project is to generate NOx emission reduction credits (ERCs). The ERCs would be used as offsets for new power generation at SRP's Kyrene and Santan Generating Stations. A significant permit revision for Santan is required to accomplish this purpose under Maricopa County Air Pollution Control Regulations (MCAPCR) Rule 210, Section 406, because of new compliance requirements related to the quantification and enforceability of the ERCs.

Subsequent to the permit revision submittal, SRP met with Maricopa County to discuss the County's schedule for processing and issuing the significant permit modification for Santan. In order to have the Santan units on line by April 2001, SRP must commence installation work by October 2000. At that meeting, you indicated that Maricopa County could not issue the permit by October 2000 due to the time allotted for EPA and public review. We then discussed the feasibility of processing two permit revisions related to the dry low NOx burner installation at Santan. The first would be a minor permit revision in conformance with MCAPCR 210, Section 405 to provide for the installation of the dry low NOx burners without any associated ERCs. MCAPCR Rule 210, Section 405 provides for the issuance of a minor permit revision for those changes at a source that do not involve substantive changes to existing monitoring, reporting, or record keeping requirements in the permit. Since there would be no substantive changes to the existing Santan permit conditions to provide for the installation of the dry low NOx burners without the ERCs, Maricopa County agreed to process a minor permit revision to accommodate the October 2000 installation schedule.

The July 10, 2000 Significant Permit Revision application would be processed at a later date to incorporate the new compliance requirements related to the ERCs. SRP requests that Maricopa County process the Significant Permit Revision by February 2001 since a portion of the ERCs from the dry low NOx burner installation at Santan will be used as offsets for the Kyrene Expansion Project.

SRP appreciates the efforts of MCESD in processing the permit revisions for the Santan Generating Station dry low NOx burner project. If you have any questions, please call me at (602) 236-2968.

Sincerely,

Kevin Wanttaja

Enclosures

cc: M. Hitt, SRP – Santan Generating Station

EC 11575.080

Description of Process

With this minor permit application SRP seeks to revise the current Santan Generating Station (Santan) Title V permit to allow for the installation and operation of dry low NO_X burners in the combustion units at the Santan.

The Santan Generating Station is located at 1005 South Val Vista Road in Gilbert, Arizona. Santan is owned and operated entirely by the Salt River Project Agricultural Improvement and Power District.

Santan is the site of four combined cycle, combustion turbine/heat recovery steam generator units used for the generation of electricity. Combined cycle units are not considered "affected units" under the federal Acid Rain Program.

Combined cycle units 1 through 4, manufactured by General Electric, are rated at a maximum output of approximately 90 MW at standard conditions. The combustion turbine section of these units consists of a high efficiency axial compressor, a combustion chamber equipped with combustors arranged in a circular array around the machine axis and a reaction type turbine. Units 1 through 3 began operation in 1973 and Unit 4 began operation in 1974.

The generating station consists of a main power building including an electrical maintenance shop, instrumentation shop, mechanical maintenance shop, communications room, laboratory, warehouse, restroom/locker rooms, lunchroom, cable spreading room, control room and offices; process water treatment facilities with battery room; storage buildings; weld/machine shop; mechanically-induced-draft cooling tower; water supply from on-site deepwells for process water uses, and from the city system for domestic water.

The primary fuel for all units is natural gas, with distillate oil (#2) as a secondary fuel for the combined cycle units. The Santan units are operated when power demands are high or more economic power is not available.

Natural gas is delivered to the site through a pipeline directly from El Paso Natural Gas Company. Distillate fuel oil is delivered to the site by tanker truck or railcar. Distillate fuel oil is currently stored on site in tank 1, with tanks 2 and 3 available for additional distillate fuel storage.

The process that takes place in the Santan units is the combustion of fuel to generate electricity. Atmospheric air is drawn into the turbine through the inlet ducting and inlet casing into the compressor where it is pressurized to approximately 10 atmospheres and forced into the combustion chamber and combustors in a steady flow. Fuel delivered into the combustors burns, raising the temperature of the mixture of air and combustion products. The compressed and heated mixture of gas then flows through the turbine, decreasing in temperature and pressure as heat energy is absorbed and converted into the mechanical work of rotation. A portion of the power developed by the turbine is used to

drive the compressor, and the balance of the energy is used for driving the generator to produce electricity. The process is made more efficient than a simple cycle combustion turbine by using heat extracted from gases exiting the combustion turbine to heat water in a heat recovery steam generator (HRSG). The Santan HRSGs are of the forced circulation, unfired, exhaust heat recovery type assembled in modular sections. The gas turbine diffuser duct module distributes the gas turbine exhaust over the width of the HRSG. The elbow module turns the exhaust flow upward and distributes it over the depth of the HRSG. Gas flows over the boiler module components in succession, past the superheater, evaporator, and economizer. The upper transition module directs the gas flow to the exhaust stack. Composition of the exhaust gases is controlled by regulating the amount of pollutant precursors, such as sulfur, in the fuels. Water in the HRSG tubes becomes steam and this steam is used to turn a steam turbine to produce an additional amount of electricity from the exhaust heat.

The pollution control project will include installation of lean pre-mix type low NOx combustors on all four Santan units. This type of Low NOx system requires the replacement of the fuel combustors, fuel nozzles, transition pieces and exhaust frames. In order to function properly, and thus achieve the design NOx emission rate and subsequent NOx reductions, the low NOx combustors require an increase in the firing temperature to 2020 F. This will effectively reduce NOx across the entire load range by thorough mixing of the gas stream and staged combustion, while limiting formation of carbon monoxide.

SRP will install the lean pre-mix, low NOx combustors on all four units during planned maintenance outages that will be extended to a 12-week period. In order to serve projected load growth anticipated in the next two years, the maintenance outages are planned for the fall/winter 2000 through spring 2001 time frame.

Future Emissions

The quantity of future annual NOx emissions is a function of the emission rate, expressed in pounds per million Btu (lbs/mmBtu), operating load conditions, and the quantity of gas burned.

Based on the manufacturer's specification, the NOx emission rate will be reduced by 80 percent during baseload operations and 60 percent at peak load. This reduction equates to:

- 20 ppm or 0.08 lb/mmBtu (baseload emission rate)
- 40 ppm or 0.16 lb/mmBtu (peak load emission rate)

Adjusted for the heating value of natural gas (1020 Btu/scf), the emission rates are:

- 82 lb/mmft3 (baseload)
- 164 lb/mmft3 (peak)

Future annual NOx emissions while burning natural gas would be determined as follows:

Baseload Emissions (tons/years) =

Gas burned at baseload (mmcf) × baseload emission factor (lbs/mmcf) × ton/2000lbs

Peak Load Emissions (tons/year) =

Gas burned at peak (mmcf) × peak load emission factor (lbs/mmcf) × ton/2000 lbs

Total Future Annual NOx Emissions =

Tons at baseload operation + Tons at peak operation

At a 100% capacity factor, future NOx Emissions from the four combustion turbines would be approximately 1056 tons.

Emissions Related Information

Nitrogen oxides emissions will decrease as a result of the dry low NOx burner installation and operation. The emission rates of all other pollutants will essentially be unchanged. For information purposes, the gas-fired emissions related information from the Santan Title V permit application is provided in Attachment 1.

In order to function properly, and thus achieve the design NO_X emission rate and subsequent NO_X reductions, the low NO_X combustors require an increase in the firing temperature to 2020° F. This will effectively reduce NOx across the entire load range by thorough mixing of the gas stream and staged combustion, while limiting formation of carbon monoxide. The equipment vendor indicates a NO_X emission reduction of 80% at base load and 60% at peak load and has guaranteed future NOx emission rates of 20 ppm during baseload operations and 40 ppm during peak load operations. SRP will conduct standard emission testing to verify the post control emission rates subsequent to installation of the low NO_X combustors.

Historical Emissions

For purposes of this application, the draft May 1998 AP-42 emission factor for NOx was used to determine emissions over the 24 month period (July 1998-June 2000) prior to submittal of the minor permit modification application. Table 1 presents the baseline actual NOx emissions from Santan for the time period of July 1998 through June 2000.

Table 1
Santan Baseline NO_X Emissions

Time Frame	Gas Burned (mmcf)	AP-42 May,1998 lb/mm ft^3	tons/yr
July 1998-June 1999	7557	410	1553
July 1999-June 2000	8579	410	1759
Average	8078	-	1656

1. INTRODUCTION

1.1 Background and Overview

Salt River Project (SRP) is developing alternatives for new electric generating facilities in Maricopa County, Arizona. Two proposed projects, the Kyrene Expansion Project (KEP) and the Santan Expansion Project (SEP), are necessary to serve the power demand created by the significant growth in the south and east valley. These projects will also serve the needed function of regulating load on the local transmission and distribution system. The KEP and the SEP will be required to secure emission offsets for one or more of the following air pollutants: carbon monoxide (CO), oxides of nitrogen (NOx), volatile organic compounds (VOC), and fine particulate matter (PM10). Details of the projects will be described more fully in their associated air quality permit applications.

America West Airlines (AWA) has agreed with SRP to electrify a portion of AWA's gasoline-fueled terminal tractors (tugs) [1], which are used as ground support equipment at Phoenix Sky Harbor Airport (Phoenix Airport), for the purpose of generating emission reduction credits (ERCs) required by New Source Review rules. SRP requests that the Maricopa County Environmental Services Department (MCESD) recognize such emission reductions as ERCs. The ERCs generated through the fleet conversion would be used by SRP as offsets for the KEP and/or the SEP. Any excess ERCs will either be used by SRP at other new generating stations or new major sources in the Phoenix nonattainment area or sold by SRP to others.

In Maricopa County no rule or precedent exists for creating offsets from the operation of clean off-road mobile equipment. Numerous states, including California, Colorado, and Connecticut, have recognized the opportunity for creating ERCs from mobile sources and have formal programs for these voluntary emission reductions. Currently, MCESD is implementing a mobile source ERC program -- the vehicle repair and retrofit program -- as a control strategy to reduce emissions of VOC and CO. In addition, Maricopa County does allow mobile source emission

[1] The terminal tractors are used to pull luggage trailers from the airplanes to the baggage handling system.

Data Certification/Fee Calculation Form 1993

Permit number(s) V95008

For EACH pollutant listed, total up all emissions recorded on your General Process and Evaporative Process Forms. Enter these numbers in column 1, "Totals from Process Forms". Report any emissions from accidental releases in column 2, or enter zero if there were no accidental releases. Add the figures in each row across, and enter the result in column 3, "Total Emissions." Carefully follow the instructions on lines 6 through 8 to calculate any emission fee owed.

Summary of 1993 Annual Emissions:	(1) Totals from Process Forms	(2) + Accidental Releases	(3) = TOTAL EMISSIONS
CO	260,368.8		
NHx			
Lead	0.1		

Emissions fees are based on your emissions of the following pollutants ONLY:

1	HAP&NON			
2	VOC	19,665.5		
3	NO_x	1,042,462.9		
4	SO_x	2,736.7		
5	PM_{10}	99,241.1		
6	**Add "TOTAL" column from lines 1 through 5 ONLY:**			1,164,106.2 lbs
7	If line 6 is less than 10,000 pounds, enter zero (0) on line 8. If line 6 is 10,000 pounds or more, divide line 6 by 2000 (pounds per ton) to get tons, and round the number to the nearest ton. (Drop any decimal .499 or less. Increase to the next whole number any decimal of .500 or more.) Enter the resulting WHOLE NUMBER here.			582 TONS
8	Multiply line 7 (a WHOLE number) by $**31.00** This is your ANNUAL EMISSION FEE. **NOTE:** If your total annual emissions are less than 10,000 lbs., no emissions fee is due.			$ 18,011.00

TO COMPLETE YOUR 1993 EMISSIONS INVENTORY REPORT:

- If your annual emissions are 10,000 lbs. or more, include a check (made payable to Maricopa County Environmental Services) for the amount calculated on line 8 above.
- Complete the Confidentiality Statement below.
- Sign and date this form below where indicated.
- Send the **original** copy of your completed forms, along with any emission fees due to: Maricopa County Environmental Services Dept., Emissions Inventory Unit, 1001 No. Central Ave., Suite 100, Phoenix, AZ 85004-1942. Keep a copy of all forms for your records.

CONFIDENTIALITY STATEMENT:

This annual emissions report contains requests to keep some data confidential. ☐ YES ☒ NO

If you check "YES", you must submit documentation and meet certain requirements before your data can be deemed confidential. See enclosed instructions for further details.

CERTIFICATION STATEMENT:

I declare under penalty of perjury that the data (e.g. inputs, emission factors, controls, and annual emissions) presented herein represents the best available information and is true, accurate and complete to the best of my knowledge.

( ) -

Signature of owner/business officer | Date of signature | Telephone number

Type or print full name of owner/business officer | Type or print full title

Data Certification/Fee Calculation Form 1994

Permit number(s) V95008

For EACH pollutant listed, total up all emissions recorded on your General Process and Evaporative Process Forms. Enter these numbers in column 1, "Totals from Process Forms". Report any emissions from accidental releases inolumn 2, or enter zero if there were no accidental releases. Add the figures in each row across, and enter the result in column 3, "Total Emissions." Carefully follow the instructions on lines 6 through 8 to calculate any emission fee owed.

Summary of 1994 Annual Emissions:	(1) Totals from Process Forms	(2) + Accidental Releases	(3) = TOTAL EMISSIONS
CO	333,322.0		333,321.3
NHx			
Lead			

Emissions fees are based on your emissions of the following pollutants ONLY:

1	HAP&NON			
2	VOC	23,557.3		23,557.3
3	NO_x	1,334,592.4		1,334,589.6
4	SO_x	3,499.2		3,494.0
5	PM_{10}	127,065.8		127,065.5
6	**Add "TOTAL" column from lines 1 through 5 ONLY:**			1,488,706.4 lbs
7	If line 6 is less than 10,000 pounds, enter zero (0) on line 8. If line 6 is 10,000 pounds or more, divide line 6 by 2000 (pounds per ton) to get tons, and round the number to the nearest ton. (Drop any decimal .499 or less. Increase to the next whole number any decimal of .500 or more.) Enter the resulting WHOLE NUMBER here.			744 TONS
8	Multiply line 7 (a WHOLE number) by $31.82 This is your ANNUAL EMISSION FEE. **NOTE:** If your total annual emissions are less than 10,000 lbs., no emissions fee is due.			$ 23,674.08

TO COMPLETE YOUR 1994 EMISSIONS INVENTORY REPORT:

- If your annual emissions are 10,000 lbs. or more, include a check (made payable to Maricopa County Environmental Services) for the amount calculated on line 8 above.
- Complete the Confidentiality Statement below.
- Sign and date this form below where indicated.
- Send the **original** copy of your completed forms, along with any emission fees due to: Maricopa County Environmental Services Dept., Emissions Inventory Unit, 1001 No. Central Ave., Suite 100, Phoenix, AZ 85004-1942. Keep a copy of all forms for your records.

CONFIDENTIALITY STATEMENT:

This annual emissions report contains requests to keep some data confidential. ☐ YES ☒ NO

If you check "YES", you must submit documentation and meet certain requirements before your data can be deemed confidential. See enclosed instructions for further details.

CERTIFICATION STATEMENT:

I declare under penalty of perjury that the data (e.g. inputs, emission factors, controls, and annual emissions) presented herein represents the best available information and is true, accurate and complete to the best of my knowledge.

Signature of owner/business officer	Date of signature	(602)236-2733 Telephone number
MICHAEL M HITT	MGR, SANTAN-KYRENE	
Type or print full name of owner/business officer	Type or print full title	

Data Certification/Fee Calculation Form 1995

Permit number(s) V95008

For EACH pollutant listed, total up all emissions recorded on your General Process and Evaporative Process Forms. Enter these numbers in column 1, "Totals from Process Forms". Report any emissions from accidental releases inolumn 2, or enter zero if there were no accidental releases. Add the figures in each row across, and enter the result in column 3, "Total Emissions." Carefully follow the instructions on lines 6 through 8 to calculate any emission fee owed.

Summary of 1995 Annual Emissions:	(1) Totals from Process Forms	(2) + Accidental Releases	(3) = TOTAL EMISSIONS
CO	145,581.9		145,581.9
NHx	3.0		
Lead			

Emissions fees are based on your emissions of the following pollutants ONLY:

1	HAP&NON			
2	VOC	10,517.7		10,517.7
3	NO_x	582,973.7		582,973.7
4	SO_x	1,610.1		1,604.6
5	PM_{10}	55,503.4		55,503.4
6	**Add "TOTAL" column from lines 1 through 5 ONLY:**			650,599.4 lbs
7	If line 6 is less than 10,000 pounds, enter zero (0) on line 8. If line 6 is 10,000 pounds or more, divide line 6 by 2000 (pounds per ton) to get tons, and round the number to the nearest ton. (Drop any decimal .499 or less. Increase to the next whole number any decimal of .500 or more.) Enter the resulting WHOLE NUMBER here.			325 TONS
8	Multiply line 7 (a WHOLE number) by $32.71 This is your ANNUAL EMISSION FEE. **NOTE:** If your total annual emissions are less than 10,000 lbs., no emissions fee is due.			$ 10,630.75

TO COMPLETE YOUR 1995 EMISSIONS INVENTORY REPORT:

- If your annual emissions are 10,000 lbs. or more, include a check (made payable to Maricopa County Environmental Services) for the amount calculated on line 8 above.
- Complete the Confidentiality Statement below.
- Sign and date this form below where indicated.
- Send the **original** copy of your completed forms, along with any emission fees due to: Maricopa County Environmental Services Dept., Emissions Inventory Unit, 1001 No. Central Ave., Suite 100, Phoenix, AZ 85004-1942. Keep a copy of all forms for your records.

CONFIDENTIALITY STATEMENT:

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CERTIFICATION STATEMENT:

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Signature of owner/business officer	Date of signature	(602)236-2733 Telephone number
MICHAEL M HITT	MGR, SANTAN-KYRENE	
Type or print full name of owner/business officer	Type or print full title	

Data Certification/Fee Calculation Form 1996

Permit number(s) V95008

For EACH pollutant listed, total up all emissions recorded on your General Process and Evaporative Process Forms. Enter these numbers in column 1, "Totals from Process Forms". Report any emissions from accidental releases inolumn 2, or enter zero if there were no accidental releases. Add the figures in each row across, and enter the result in column 3, "Total Emissions." Carefully follow the instructions on lines 6 through 8 to calculate any emission fee owed.

Summary of 1996 Annual Emissions:	(1) Totals from Process Forms	(2) + Accidental Releases	(3) = TOTAL EMISSIONS
CO	192,933.6		192,933.6
NHx	3.8		
Lead			

Emissions fees are based on your emissions of the following pollutants ONLY:

1	HAP&NON			
2	VOC	13,756.4		13,756.5
3	NO_x	801,628.4		801,628.4
4	SO_x	16,167.2		16,165.5
5	PM_{10}	75,939.7		76,000.2
6	**Add "TOTAL" column from lines 1 through 5 ONLY:**			907,550.6 lbs
7	If line 6 is less than 10,000 pounds, enter zero (0) on line 8. If line 6 is 10,000 pounds or more, divide line 6 by 2000 (pounds per ton) to get tons, and round the number to the nearest ton. (Drop any decimal .499 or less. Increase to the next whole number any decimal of .500 or more.) Enter the resulting WHOLE NUMBER here.			454 TONS
8	Multiply line 7 (a WHOLE number) by $33.61 This is your ANNUAL EMISSION FEE. **NOTE:** If your total annual emissions are less than 10,000 lbs., no emissions fee is due.			$ 15,258.94

TO COMPLETE YOUR 1996 EMISSIONS INVENTORY REPORT:

- If your annual emissions are 10,000 lbs. or more, include a check (made payable to Maricopa County Environmental Services) for the amount calculated on line 8 above.
- Complete the Confidentiality Statement below.
- Sign and date this form below where indicated.
- Send the **original** copy of your completed forms, along with any emission fees due to: Maricopa County Environmental Services Dept., Emissions Inventory Unit, 1001 No. Central Ave., Suite 100, Phoenix, AZ 85004-1942. Keep a copy of all forms for your records.

CONFIDENTIALITY STATEMENT:

This annual emissions report contains requests to keep some data confidential. ☐ YES ☒ NO

If you check "YES", you must submit documentation and meet certain requirements before your data can be deemed confidential. See enclosed instructions for further details.

CERTIFICATION STATEMENT:

I declare under penalty of perjury that the data (e.g. inputs, emission factors, controls, and annual emissions) presented herein represents the best available information and is true, accurate and complete to the best of my knowledge.

Signature of owner/business officer	Date of signature	(602)236-2733 Telephone number
MICHAEL M HITT	MGR, SANTAN-KYRENE	
Type or print full name of owner/business officer	Type or print full title	

Data Certification/Fee Calculation Form 1997

Permit number(s) V95008

For EACH pollutant listed, total up all emissions recorded on your General Process and Evaporative Process Forms. Enter these numbers in column 1, "Totals from Process Forms". Report any emissions from accidental releases in column 2, or enter zero if there were no accidental releases. Add the figures in each row across, and enter the result in column 3, "Total Emissions." Carefully follow the instructions on lines 6 through 8 to calculate any emission fee owed.

Summary of 1997 Annual Emissions:	(1) Totals from Process Forms	(2) + Accidental Releases	(3) = TOTAL EMISSIONS
CO	310,900.6		310,900.3
NHx			
Lead			

Emissions fees are based on your emissions of the following pollutants ONLY:

1	HAP&NON			
2	VOC	21,123.5		21,117.4
3	NO_x	1,244,679.1		1,244,679.4
4	SO_x	2,193.4		2,186.9
5	PM_{10}	118,529.2		118,528.7
6	**Add "TOTAL" column from lines 1 through 5 ONLY:**			1,386,512.3 lbs
7	If line 6 is less than 10,000 pounds, enter zero (0) on line 8. If line 6 is 10,000 pounds or more, divide line 6 by 2000 (pounds per ton) to get tons, and round the number to the nearest ton. (Drop any decimal .499 or less. Increase to the next whole number any decimal of .500 or more.) Enter the resulting WHOLE NUMBER here.			693 TONS
8	Multiply line 7 (a WHOLE number) by $34.53 This is your ANNUAL EMISSION FEE. **NOTE:** If your total annual emissions are less than 10,000 lbs., no emissions fee is due.			$ 23,929.29

TO COMPLETE YOUR 1997 EMISSIONS INVENTORY REPORT:

- If your annual emissions are 10,000 lbs. or more, include a check (made payable to Maricopa County Environmental Services) for the amount calculated on line 8 above.
- Complete the Confidentiality Statement below.
- Sign and date this form below where indicated.
- Send the **original** copy of your completed forms, along with any emission fees due to: Maricopa County Environmental Services Dept., Emissions Inventory Unit, 1001 No. Central Ave., Suite 100, Phoenix, AZ 85004-1942. Keep a copy of all forms for your records.

CONFIDENTIALITY STATEMENT:

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If you check "YES", you must submit documentation and meet certain requirements before your data can be deemed confidential. See enclosed instructions for further details.

CERTIFICATION STATEMENT:

I declare under penalty of perjury that the data (e.g. inputs, emission factors, controls, and annual emissions) presented herein represents the best available information and is true, accurate and complete to the best of my knowledge.

Signature of owner/business officer	Date of signature	(602)236-2733 Telephone number
MICHAEL M HITT	MGR, SANTAN-KYRENE	
Type or print full name of owner/business officer	Type or print full title	

Data Certification/Fee Calculation Form 1998

Permit number(s) V95008

For EACH pollutant listed, total up all emissions recorded on your General Process and Evaporative Process Forms. Enter these numbers in column 1, "Totals from Process Forms". Report any emissions from accidental releases inolumn 2, or enter zero if there were no accidental releases. Add the figures in each row across, and enter the result in column 3, "Total Emissions." Carefully follow the instructions on lines 6 through 8 to calculate any emission fee owed.

Summary of 1998 Annual Emissions:	(1) Totals from Process Forms	(2) + Accidental Releases	(3) = TOTAL EMISSIONS
CO	615,171.9		615,172.2
NHx			
Lead			

Emissions fees are based on your emissions of the following pollutants ONLY:

1	HAP&NON			
2	VOC	41,361.3		41,342.9
3	NO_x	2,472,245.6		2,472,245.6
4	SO_x	3,665.1		3,706.8
5	PM_{10}	235,442.2		235,442.7
6	**Add "TOTAL" column from lines 1 through 5 ONLY:**			2,752,738.0 lbs
7	If line 6 is less than 10,000 pounds, enter zero (0) on line 8. If line 6 is 10,000 pounds or more, divide line 6 by 2000 (pounds per ton) to get tons, and round the number to the nearest ton. (Drop any decimal .499 or less. Increase to the next whole number any decimal of .500 or more.) Enter the resulting WHOLE NUMBER here.			1,376 TONS
8	Multiply line 7 (a WHOLE number) by $35.11 This is your ANNUAL EMISSION FEE. **NOTE:** If your total annual emissions are less than 10,000 lbs., no emissions fee is due.			$ 48,311.36

TO COMPLETE YOUR 1998 EMISSIONS INVENTORY REPORT:

- If your annual emissions are 10,000 lbs. or more, include a check (made payable to Maricopa County Environmental Services) for the amount calculated on line 8 above.
- Complete the Confidentiality Statement below.
- Sign and date this form below where indicated.
- Send the **original** copy of your completed forms, along with any emission fees due to: Maricopa County Environmental Services Dept., Emissions Inventory Unit, 1001 No. Central Ave., Suite 100, Phoenix, AZ 85004-1942. Keep a copy of all forms for your records.

CONFIDENTIALITY STATEMENT:

This annual emissions report contains requests to keep some data confidential. ☐ YES ☒ NO

If you check "YES", you must submit documentation and meet certain requirements before your data can be deemed confidential. See enclosed instructions for further details.

CERTIFICATION STATEMENT:

I declare under penalty of perjury that the data (e.g. inputs, emission factors, controls, and annual emissions) presented herein represents the best available information and is true, accurate and complete to the best of my knowledge.

Signature of owner/business officer	Date of signature	(602)236-2733 Telephone number
MICHAEL M HITT	MGR, SANTAN-KYRENE	
Type or print full name of owner/business officer	Type or print full title	

Data Certification/Fee Calculation Form 1999

Permit number(s) V95008

For EACH pollutant listed, total up all emissions recorded on your General Process and Evaporative Process Forms. Enter these numbers in column 1, "Totals from Process Forms". Report any emissions from accidental releases inolumn 2, or enter zero if there were no accidental releases. Add the figures in each row across, and enter the result in column 3, "Total Emissions." Carefully follow the instructions on lines 6 through 8 to calculate any emission fee owed.

Summary of 1999 Annual Emissions:	(1) Totals from Process Forms	(2) + Accidental Releases	(3) = TOTAL EMISSIONS
CO	673,412.2		673,412.2
NHx			
Lead			

Emissions fees are based on your emissions of the following pollutants ONLY:

1	HAP&NON			
2	VOC	7,266.8		7,266.6
3	NO_x	2,713,283.2		2,713,283.3
4	SO_x	8,059.0		8,059.2
5	PM_{10}	258,322.2		258,322.2
6	**Add "TOTAL" column from lines 1 through 5 ONLY:**			2,986,931.2 lbs
7	If line 6 is less than 10,000 pounds, enter zero (0) on line 8. If line 6 is 10,000 pounds or more, divide line 6 by 2000 (pounds per ton) to get tons, and round the number to the nearest ton. (Drop any decimal .499 or less. Increase to the next whole number any decimal of .500 or more.) Enter the resulting WHOLE NUMBER here.			1,493 TONS
8	Multiply line 7 (a WHOLE number) by $35.76 This is your ANNUAL EMISSION FEE. **NOTE:** If your total annual emissions are less than 10,000 lbs., no emissions fee is due.			$ 53,389.68

TO COMPLETE YOUR 1999 EMISSIONS INVENTORY REPORT:

- If your annual emissions are 10,000 lbs. or more, include a check (made payable to Maricopa County Environmental Services) for the amount calculated on line 8 above.
- Complete the Confidentiality Statement below.
- Sign and date this form below where indicated.
- Send the **original** copy of your completed forms, along with any emission fees due to: Maricopa County Environmental Services Dept., Emissions Inventory Unit, 1001 No. Central Ave., Suite 100, Phoenix, AZ 85004-1942. Keep a copy of all forms for your records.

CONFIDENTIALITY STATEMENT:

This annual emissions report contains requests to keep some data confidential. ☐ YES ☒ NO

If you check "YES", you must submit documentation and meet certain requirements before your data can be deemed confidential. See enclosed instructions for further details.

CERTIFICATION STATEMENT:

I declare under penalty of perjury that the data (e.g. inputs, emission factors, controls, and annual emissions) presented herein represents the best available information and is true, accurate and complete to the best of my knowledge.

Signature of owner/business officer	Date of signature	(602)236-2733 Telephone number
MICHAEL M HITT	PLANT MANAGER	
Type or print full name of owner/business officer	Type or print full title	

SAN TAN EMMISSIONS (IN TONS)

	1993	1994	1995	1996	1997	1998	1999	NEW PLANT ALONE (NOT USING OLD)
CO	130	166.6	72.7	96	155	307.5	336.7	417.7
VOC	9.8	11.7	5	6.8	10.5	20	3.63	104.1
NOx	521	667	291	400.8	622	1236	1356	269.3
PM10	47.6	63.5	27.75	37.9	59	117.7	129	244
TOTAL	708.4	908.8	396.45	541.5	846.5	1681.2	1825.33	1035.1

VOC includes Hazardous Air Pollutants →

Dry Low Nox Burners to be installed would reduce Nox by 60% Peaking or 80% Baseload but not reduce other pollutants.

IF 99 emmission were adjusted to reduce NOx by 60% (after Dry low NOx burner installed) they would be as follows:

CO - 336.7
VOC - ~~104~~ 3.6
NOX - ~~542~~ 542.4
PM_{10} - 129

~~1011.7~~

If used w/ new plant at this 99 capacity w/ cleaners installed would get →

New & cleaners w/ 99 emission

CO - 754.4
VOC - 107.7
NOX - ~~811.7~~
PM_{10} - 373

2046.8

P. O. Box 52025
Phoenix, AZ 85072-2025
(602) 236-5900

Mail Station: PAB352
Direct Phone: (602) 236-5532
Fax: (602) 236-3407
Email: sdfeaste@srp.gov

July 1, 1998

Via Hand Delivery

Elena Gorelik
Maricopa County Environmental Services
Air Permits Section
1001 N. Central Avenue, Suite 150
Phoenix, AZ 85004

Re: Draft Title V Permit
SRP Santan Generating Station
Permit # V95-008

Ms. Gorelik:

SRP appreciates the opportunity to comment on the draft Title V permit conditions for SRP's Santan Generating Station. The goal of the Title V permitting program is to facilitate more efficient compliance with applicable regulatory requirements. With this goal in mind, SRP provides the following comments on the June 25, 1998 draft.

Comments on Santan's Draft Title V General Permit Conditions

1.	Section 4 - RACT:	Condition does not acknowledge NOx RACT exemption for Maricopa County. On April 19, 1995, EPA promulgated an exemption for the Phoenix ozone nonattainment area from the requirement to implement oxides of nitrogen reasonably available control technology (RACT). This permit condition should incorporate the NOx RACT waiver and thereby exempt Santan from the NOx RACT requirement.
2.	Section 13 - Monitoring:	Rule 245 §302.1a provides exemptions from monitoring requirements for gas-fired steam generators. SRP requests that the regulatory based monitoring exemption be included in this permit provision.
3.	Section 14 - Permits:	Rule 210 allows construction to commence contemporaneously with permit revision applications or 7 –day notifications. This permit condition prohibits construction or operation until permit is revised. Permit language should be revised to be consistent with the regulatory requirement.

than each 15 second reading.

5. The total dissolved solids (TDS) based emission limitation on the cooling tower is unwarranted for several reasons. First, there is no established correlation between TDS and particulate matter that is emitted off-site. There also is no applicable requirement that specifically limits particulate emissions from cooling towers, therefore no correlation is necessary. Furthermore, a current exemption in the Groundwater Management Act limits the condensation cycles, which maximize TDS. In addition, the potential to emit calculation is based on a TDS concentration of 10,000 ppm; the proposed permit condition limits TDS to 3,000 ppm. If the County maintains a TDS based emission limit, SRP requests a TDS concentration limit of 10,000 ppm which is consistent with the cooling tower design parameters.

6. Permitting requirements for new source review should be removed from the permit, or moved to the general condition section, because they are only applicable if triggered by a modification at the facility or construction of a new source.

7. Consistent units should be used in allowable emissions table (SO_2 daily limit); limits do not accurately correspond to PtE based calculations, therefore need to be revised slightly.

8. Pursuant to the 7-day Notification that SRP submitted on May 18, 1998, the auxiliary boiler was dismantled and removed. Please remove the auxiliary boiler from the equipment list and revise any permit conditions, as necessary.

9. The PM limit is source specific, not facility-wide, therefore the requirement should be removed from section 1 of the permit.

Comments on Santan's Draft Title V Appendix A: Equipment List

- The circulation rate of the cooling tower is 101,500 gpm.
- The abrasive blasting equipment has been in operation since 1978.
- The auxiliary boiler was dismantled and removed from service pursuant to a 7-day notification dated May 18, 1998.
- Santan has a diesel fire pump, not an emergency generator, on site.
- SRP requests that the solvent cleaning equipment be listed as "Unheated, non-conveyorised, cleaning equipment". The equipment, as defined in the permit condition, is exempt from permitting. SRP would like to reserve the ability to operate a degreaser with a larger surface than one square meter.

If you have any questions, comments or require additional information, please contact Sherry Haller-Feaster at (602) 236-5532. SRP is willing to meet with Maricopa County officials to discuss in further detail any questions you have regarding this response.

Sincerely,

Kevin Wanttaja

Kevin Wanttaja, Manager
Environmental Compliance

EC-11119.078

Comments on Santan's Draft Title V Specific Permit Conditions

Itemized below are general comments on the specific permit conditions. The general comments are followed by a tabular summary of the proposed permit conditions and SRP's associated comments.

1. Operational limitations for surface coating, abrasive blasting and solvent cleaning that limit product usage are not specified in applicable requirements, therefore they should not be included in the permit. In addition, the surface coating and cooling tower particulate limits and the abrasive blasting PM10 limit.

   For example, Rule 336, the applicable rule for surface coating, limits the type of paint that can be used but does not stipulate product use restrictions. The permit conditions should therefore require use of compliant coatings, allowing the use of regulatory exempt products. Rule 210, §302.1(b) states that the permit shall contain enforceable emission limitations that "...assure compliance with all applicable requirements at the time of issuance". In the case of surface coating, the applicable requirement limits the VOC content, not total VOC emissions, therefore, the permit condition should only reflect limits on the type of paint, not total paint usage. Usage limitations and emission limits that are not based on regulatory requirements should be removed from the surface coating, abrasive blasting, cooling tower and solvent cleaning permit conditions. The facility wide allowable emissions should then be adjusted and designated as limits for fuel burning operations only.

2. SRP firmly objects to including outdated requirements in Title V permits. SRP has requested a waiver from EPA that exempts applicability of the SO_2 ambient SIP requirement until Maricopa County submits the necessary documentation to remove it from the SIP. Based on our review of the public record, Maricopa County submitted a revised rule to remove the ambient limits in 1975. EPA never acted on, either approving or disapproving, the revision. Removal of the ambient standard requires demonstration that Maricopa County would continue to comply with the NAAQS or possibly that the requirement is technically infeasible. The compliance demonstration requires extensive scenario analysis (modeling) that incorporates all SO_2 sources operating under various conditions. The other option that could initiate removal of the ambient requirement is if a major source (in Maricopa County) submits an NSR application. SRP requests that the ambient SO_2 permit condition be revised as follows:

   This Permit Condition shall be void unless and until the SO_2 ambient compliance demonstration verifies that source specific ambient standards are necessary to maintain compliance with the NAAQS.

3. SRP recommends consistent frequency for monitoring and recordkeeping requirements. For example, the PM and opacity requirements for fuel burning equipment should be consistent, i.e. the Method 22 visual check should be conducted monthly, and triggered in conjunction with the monitoring requirement for opacity. Tracking consistent operating thresholds, which trigger consistent monitoring requirements, increases compliance. Continuing with the fuel burning example, both the opacity and PM monitoring requirements should be triggered monthly if the unit operates more than 30-hours on oil. SRP strongly recommends monthly requirements for monitoring and recordkeeping.

4. The permit does not specify the format or timeframe for submitting the 6-month compliance report. SRP recommends that Maricopa County accept a compliance summary or checklist submitted within 30-days of the end of the six-month period. The compliance checklist would summarize Santan's compliance status with respect to each applicable requirement. For example, if abrasive blasting exceeded the monthly threshold which triggers a method 9, then the checklist would specify the average opacity reading from the abrasive blast building, rather